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CLAIMS

1. A method of transferring a substance into a cell comprising using porous or polycrystalline silicon for conveying the substance into the cell.
- 5 2. A method according to claim 1 which comprises using a resorbable or bioerodable porous or polycrystalline silicon.
- 10 3. A method according to claim 1 or claim 2 comprising using a microneedle that comprises at least a region of porous or polycrystalline silicon.
- 15 4. A method according to claim 3 comprising having at least the tip of the needle provided with porous or polycrystalline silicon.
- 20 5. A method according to any preceding claim which comprises using a microneedle (i) having a coating of porous or polycrystalline silicon or (ii) made substantially completely of porous or polycrystalline silicon; at least for a portion of the length of the microneedle.
- 25 6. A method according to any preceding claim comprising using an array of microneedles which comprise at least in part porous or polycrystalline silicon.
7. A method according to any preceding claim which comprises using a microneedle or microneedle array, in which the microneedles are hollow and comprise porous or polycrystalline silicon, the substance being provided in the hollow or transferred through the hollow.

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8. A method according to any preceding claim in which a microneedle array is used, the array comprising a plurality of needles extending away from a support, the needles comprising substantially completely, or at least in part, porous or polycrystalline silicon, and each needle having fluid transfer means adapted to transport fluid from their bases to their tips, and fluid supply means communicating with the fluid transport means and supplying fluid to be injected to the base of the needles.
9. A method according to any of claims 3 to 8 in which the needle has no central lumen and comprises a micropiercer, porous or polycrystalline silicon being provided on the needle, the porous silicon holding the substance to be conveyed.
10. A method according to any one of claims 1 to 9 comprising providing a needle or needles with a pore network extending from a reservoir or channel to a substance delivery region provided at the surface of the needle.
11. A method according to claim 1 or claim 2 which comprises using a porous or polycrystalline silicon biolistic bullet.
12. A method according to claim 1 or claim 2 which comprises using porous or polycrystalline silicon having the substance associated with it, and providing the porous or polycrystalline silicon in a form adapted to co-precipitate with another substance to form a co-precipitate which is taken into the cell.
13. A method according to claim 12 comprising using calcium phosphate as the co-precipitate.

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14. A method according to claim 1 or claim 2 comprising using an electrically bioactive electrode that comprises at least in part porous or polycrystalline silicon, and using electroporation to convey the substance into the cells.

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15. A method according to claim 14 in which the cells adhere to the electrode.

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16. A method according to any preceding claim in which the substance comprises DNA or RNA, a fragment of DNA or RNA, or a construct of DNA or RNA.

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17. A microneedle or micropiercer comprising porous or polycrystalline silicon.

18. A microneedle according to claim 17 which has a duct.

19. A microneedle according to claim 18 in which the duct extends from the base region of the needle to the tip of the needle.

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20. A microneedle according to any one of claims 17 to 19 in which at least a portion of the needle is made substantially completely of porous or polycrystalline silicon.

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21. A microneedle according to any of claims 17 to 20 in which at least a part of the needle comprises a surface layer of porous or polycrystalline silicon.

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22. A microneedle according to any one of claims 17 to 21 in which a porous or capillary network is provided.

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23. A needle array having a microneedle or a micropiercer according to any one of claims 17 to 22 which further comprises a substance adapted to be conveyed into a cell.

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24. A needle according to claim 23 in which the substance is carried by, or held on the needle, by the porous or polycrystalline silicon.

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25. A needle according to any one of claims 17 to 24 which is resorbable or bioabsorbable, or at least part of which is resorbable or bioabsorbable.

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26. An array of microneedles extending away from a support, in which the microneedles are in accordance with any of claims 17 to 25.

27. A cell-entering vehicle for transferring material into a cell, the vehicle comprising, at least in part, porous or polycrystalline silicon, and material to be transferred into the cell.

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28. A vehicle according to claim 27 in which the porous or polycrystalline silicon is resorbable.

29. A vehicle according to claim 27 or claim 28 which comprises a biolistic bullet comprising porous or polycrystalline silicon.

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30. A vehicle according to claim 29 in which the biolistic bullet is made substantially completely of porous or polycrystalline silicon.

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31. A vehicle according to claim 28 or claim 29 in which the vehicle comprises a substance which in use will co-precipitate with a co-precipitate substance that is taken into the cell.
- 5 32. A vehicle according to claim 28 or claim 29 which comprises an electrically-conducting bioactive porous or polycrystalline silicon electrode.
- 10 33. The use of porous or polycrystalline silicon as a cell-entering transfer medium for transferring materials into a living cell.

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